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ABSTRACT

A method and apparatus for binding arguments of a call instruction includes maintaining a mapping of virtual to physical registers, and binding arguments by copying mappings (rather than values). A related aspect includes selectively pushing the mapping state to a stack when processing a call instruction, and selectively popping the mapping from the stack when processing a return instruction. The mapping state includes an address of the physical register mapped to the corresponding virtual register, and a status indicator including states corresponding to clean and not clean (or dirty). Another related aspect provides for designation of a subset of the virtual registers as local virtual local registers. When processing a call instruction all of the virtual local register mappings are pushed, and when processing a return instruction the virtual local register mappings are popped.